IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application No. 10/579,025

Confirmation No. 3646

Applicant: Panicali et al.

Filed: October 19, 2006

TC/AU: 1632

Examiner: Wu-Cheng Winston Shen

Docket No.: 701281 (Client Reference No. E-087-2005/0-US-03)

Customer No.: 45733

DECLARATION UNDER 37 C.F.R. § 1.132 OF JEFFREY SCHLOM, PH.D.

I, Jeffrey Schlom, Ph.D., do hereby declare:

1. I am a co-inventor of the subject matter disclosed and claimed in the above-captioned patent application.

2. I am aware of the general knowledge available in the art and of the skill level of the ordinary artisan as it exists today and as it existed at the earliest priority date of the above-identified patent application (referred to herein as the "present application") of November 12, 2003.

3. I am familiar with the present application. The pending claims are directed to a method for inducing an immunological response against a malignant pancreatic cell in an individual or inhibiting growth of a malignant pancreatic cancer cell in an individual, wherein the method comprises (a) selecting an individual having malignant pancreatic cells or at risk for developing such a pancreatic tumor, (b) administering to the individual a first poxvirus vector containing one or more DNA segments that encode (i) carcinoembryonic antigen (CEA), an antigenic portion thereof, or a modified version thereof, and (ii) mucin (MUC), an antigenic portion thereof, or a wobbled version thereof, and (c) at regular intervals thereafter administering at least a second poxvirus vector containing one or more DNA segments that encode (i) CEA, an antigenic portion thereof, or a modified version thereof, and (ii) MUC, an antigenic portion thereof, or a wobbled version thereof.

4. I have reviewed the Office Action from the U.S. Patent and Trademark Office (USPTO) regarding the present application dated January 21, 2011. I understand that the USPTO has rejected the pending claims of the present application because the USPTO considers that the subject matter of the pending claims is obvious in view of the disclosures of the Laidlaw (U.S. Patent 7,273,605), Pecher (WO 01/24832), and Kotera (*Cancer Res., 54(11)*: 2856-60 (1994)) references.

5. None of the cited references discloses a method of inducing an immunological response against a malignant pancreatic cell in an individual or inhibiting growth of a malignant pancreatic cancer cell in an individual by administering a first and second poxvirus vector containing one or more DNA segments that encode (i) CEA, an antigenic portion thereof, or a modified version thereof, and (ii) MUC, an antigenic portion thereof, or a wobbled version thereof.

6. In my opinion, one of ordinary skill would not have known, based on the references cited in the Office Action, whether the administration of a first and second poxvirus vector containing one or more DNA segments that encode (i) CEA, an antigenic portion thereof, or a modified version thereof, and (ii) MUC, an antigenic portion thereof, or a wobbled version thereof would result in successfully inducing an immunological response against a malignant pancreatic cell and inhibiting growth of a pancreatic cell in an individual.

7. The impact of administering two antigens together at one location could not have been known without extensive experimentation, such as by designing and implementing a clinical study or, at the very least, a mouse model system for pancreatic cancer. As described by Palmowski et al. (*J. Immunol., 168*: 4391-4398 (2002)) and Brody et al. (*Immunol., 22*: 75-85 (1972)), the presentation of two antigens together (at the same location) could result in competition between the two antigens, thereby resulting in a reduced immune response to one or both of the antigens (see, e.g., page 4397, second column, fourth full paragraph, of Palmowski et al., and page 83, lines 1-3, of Brody et al.).

8. Clinical studies were performed to determine the effect of administering a vaccine comprising a first and second vector containing CEA and MUC-1 (see Examples 4, 5, and 11 of the present application), as encompassed by the pending claims. Metastatic pancreatic cancer patients receiving this vaccine were

shown to have a trend toward an overall survival greater than the expected median overall survival (see Abstract of Schuetz et al., *J. Clin. Oncol., 2005 ASCO Annual Meeting Proceedings, 23(16S Part I of II in June 1 Supplement)*: 2576 (2005)). The unexpected beneficial results demonstrate that the inventive methods can successfully be used to induce an immunological response against malignant pancreatic cells and inhibit the growth of pancreatic cells in pancreatic cancer patients.

9. I hereby declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 7-11-11

Jeffrey Schlom, Ph.D.